AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph on page 3, line 14 to page 4, line 3 as follows:

The conventional optical transmission system of the angle-modulated signal as described above has an advantage ~~in the following~~, compared with an optical transmission system of an amplitude-modulated (AM) signal. ~~That is~~ In particular, the frequency deviation (or the phase deviation) of the angle-modulated signal is set larger, so that a larger gain in angle modulation can be acquired at the optical transmission. As a result, SNR (signal-to-noise power ratio) of a demodulated signal increases, realizing transmission of a signal of good quality. Moreover, the frequency deviation (or the phase deviation) of the angle-modulated signal is increased to spread a frequency spectrum of the optical-modulated signal and suppress a peak level of the frequency spectrum, which leads to an advantage in that deterioration of signal quality due to multipath reflection on an optical transmission line is reduced.

Please amend the paragraph on page 7, lines 2 to 11 as follows:

In the case where an electrical circuit using parts for wide-bands and high-frequencies is adopted as a demodulation device for an angle-modulated signal, connection or matching among the parts are difficult, causing deterioration of linearities of demodulation characteristics or group delay characteristics easily to degrade the quality of ~~an~~ a demodulated signal. Moreover, the parts for wide-bands and high-frequencies are generally expensive, so that the cost of the demodulation device increases, significantly deteriorating the economy of the system.

Please amend the paragraph on page 8, lines 15 to 17 as follows:

A sixth aspect is an aspect according to ~~claim 1~~ the first aspect, wherein the optical modulating portion generates an optical-intensity-modulated signal as the optical-modulated signal.

Please amend the paragraph on page 37, lines 4 to 9 as follows:

~~an~~ a plurality of optical signal processing portions, provided corresponding to the plurality of optical-modulated signals outputted from the optical branch portion respectively, for each performing predetermined optical signal processing and then individually reproducing the plurality of electrical signals, and

Please amend the paragraph on page 55, line 23 to page 56, line 20 as follows:

In the second specific example, the optical directional coupling portion 206 combines the optical-phase-modulated signals outputted from the first and second optical phase modulating portions 203 and 204 to convert the resultant signal into an optical-amplitude-modulated signal and then branches the optical-amplitude-modulated signal into first and second optical signals that have optical-modulated components being set in opposite phases to each other. In this case, as shown in FIG. 7c, a waveform of an optical current outputted from the optical/electrical converting portion 4 becomes a pulse-like signal being in opposite phase with respect to that of the first operational example (refer to FIG. 3c), and the number of occurrence of positive differential ~~pluses~~ pulses included in the pulse-like signal uniquely corresponds to the variations in frequency of the FM signal. Accordingly, the pulse-like signal is inputted to the filter F, whereby only a signal component of a band (a low-frequency

component) corresponding to that of an electrical signal inputted to the FM portion 100 is derived and as a result, the electrical signal can be acquired. Since equations of the operation are the same as those of the first operational example except that the phases of the signal waveforms are different, description of the equations is omitted here.

Please amend the paragraph on page 71, lines 4 to 11 as follows:

Further, in the first to third specific examples, the first optical branch portion 202, the first and second optical phase modulating portions 203 and 204 and the optical coupling portion 205 (or the optical directional coupling portion 206) are preferably constructed on a same crystal substrate. Such structure is the same as that of an optical intensity modulator of normal Mach-Zehnder type. Adopting such structure makes the construction of an optical transmitter ~~more readily~~easier.

Please amend the paragraph on page 83, line 13 to page 84, line 7 as follows:

An optical signal outputted from the optical modulating portion 2 is combined with a light outputted from the local light source 13 on the optical combining portion 14 and then transmitted to the interference portion 6 by the optical waveguide portion 3. The optical signal is subjected to angle demodulation and heterodyne detection by the interference portion 6 and the optical/electrical converting portion 4. At this time, the outputted signal from the optical/electrical converting portion 4 includes an angle-demodulated signal component corresponding to an electrical signal inputted to the angle modulating portion 1 and a beat signal component of a frequency corresponding to difference in wavelength between the optical signal outputted from the optical modulating portion and the light outputted from the

local light source 13. The dividing portion 15 branches the outputted signal from the optical/electrical converting portion 4 into two and subjects the two ~~signal~~ signals obtained by the branch to predetermined filtering processing, respectively to separate the angle-demodulated signal component and the beat signal component and output the two signals.

Please amend the paragraph on page 84, lines 8 to 24 as follows:

As described in the above, the optical transmission systems in FIG. 18, FIG. 19 and FIG. 20 can provide different ~~kind~~ kinds of networks (for example, a wired network using an optical fiber and a wireless network) at the same time, as in the case with the optical transmission system in FIG. 17. Moreover, regardless of a value of the frequency of the angle-modulated signal outputted from the angle modulating portion 1, the optical transmission systems can suitably set the wavelength of the optical signal from the optical modulating portion 2 and the wavelength of the light from the local light source 11 or 13, to freely convert the frequency of the angle-modulated signal which is a beat signal outputted from the second optical/electrical converting portion 4', thereby making it possible to generate an angle-modulated signal of the frequency suitable for each network connected to the second optical/electrical converting portion 4' and thereafter. Thus, a more flexible system can be configured.

Please amend the paragraph on page 88, lines 3 to 17 as follows:

As described in the above, the optical transmission system in FIG. 21 and FIG. 22 can provide different ~~kind~~ kinds of networks at the same time, as in the case with the optical transmission system in FIG. 17. Further, regardless of a value of the frequency of the angle-

modulated signal outputted from the angle modulating portion 1, the optical transmission system can suitably set the frequency of the local signal outputted from the local oscillation portion 16 to freely convert the frequency of an angle-modulated signal which is the beat signal induced by the angle-modulated signal and the local signal, thereby making it possible to generate an angle-modulated signal of a frequency suitable for each network connected to the second optical/electrical converting portion 4' and thereafter and send the angle-modulated signal. Thus, a more flexible system can be configured.

Please amend the paragraph on page 89, line 13 to page 90, line 11 as follows:

The combining portion 18 combines an angle-modulated signal outputted from the angle modulating portion 1, of which the original signal is the first electrical signal, and the second electrical signal, to output the resultant signal. The optical modulating portion 2 converts the combined signal into an optical-modulated signal, to output the optical-modulated signal. The optical branch portion 10 branches the optical signal guided by the optical waveguide portion 3 into two. One optical signal of the two optical signals is subjected to angle demodulation with the interference portion 6 and the first optical/electrical converting portion 4 and further subjected to filtering processing by the filter F, to be re-converted into an electrical signal corresponding to the first electrical signal inputted to the angle modulating portion 1. The second optical/electrical converting portion 4' receives the other optical signal of the two optical signals and re-converts the optical-intensity-modulated component or the optical-amplitude-modulated component of the optical signal into an electrical signal with square-law detection, to output an electrical signal which corresponds to the second electrical signal inputted to the combining portion 18. The filter F' derives the

second electrical signal component from the outputted signal of the second optical/electrical converting portion 4' and outputs the second electrical signal component.

Please amend the paragraph on page 90, line 21 to page 91, line 5 as follows:

FIG. 24 is a block diagram showing the configuration of an optical transmission system according to the ninth embodiment of the present invention. The ninth embodiment is an application of the above-mentioned eighth embodiment and therein first, second, third and fourth signal processing portions 19, 20, 21 and 22 are added to the configuration of the eighth embodiment. Each of the third and fourth signal processing portions 21 and 22 also has a function of ~~filter~~ filtering and therefore the filters F and F' are not provided in the present embodiment.